

## REMARKS

**I. Claim status.** Claims 1 through 20 are pending. Claims 1 through 6 and Claim 8 are currently amended.

*(i) Amendment of the Claims.*

Claim 1 has been amended to recite an anionic dye having an attached spacer arm, wherein, the presence of the spacer arm modifies the dyeing properties of the anionic colorant. Support for the amendment may be found in the specification at p. 2, paragraph 32<sup>1</sup>. Claim 2 has been amended to recite a single R member. Support for the amendment may be found in the specification at Example 2, p. 5, paragraph 77 and Example 4, p. 7, paragraph 81. Claim 3 has been amended to remove “eventually metallized”. Support for the amendment may be found in the specification at p. 2, paragraphs 36 and 37. Claims 4 and 5 have been amended to correct a typographical error, to recite “esterified” rather than “sterified.” Claim 6 has been amended to properly depend from claim 5. The scope of Claim 6, has not been altered and as such no new matter has been added to the claim. Claim 8 has been amended to clarify member W. Support for the amendment may be found in the specification at p. 3, paragraph 53.

New claims 21 and 22 have been added. Support for new Claim 21 may be found in the specification at page 2-3, paragraphs 48-51 and Example 3, page 6, paragraph 79. Support for new Claim 22 may be found in the specification at page 3, paragraph 52-55.

**II. Claim Rejections.** Applicants have carefully studied the Office Action mailed on April 7, 2003, which issued in connection with the above-identified application. Along with the current amendments, the present remarks are intended to be fully responsive to

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<sup>1</sup> Applicant refers examiner to Published Application US 2002/0083532 A1 of the present application, a courtesy copy of which is enclosed.

all points of rejection raised by the Examiner and are believed to place the remaining claims in condition for allowance. Favorable reconsideration and allowance of the present claims are respectfully requested.

*(i) Rejections under 35 U.S.C. § 112, second paragraph.*

Claims 1 through 20 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The Examiner contends that Claim 1 is vague and indefinite for reciting the phrase “spacer arm”. The Examiner alleges the phrase “spacer arm”, as used in claim 1, refers to a linking substituent. At the same time, the Examiner alleges that the phrase “spacer arm”, as used in claim 2, is appended to the end of a colorant, thus making the phrase ambiguous.

The applicant respectfully traverses the Examiner’s rejection of Claim 1 under 35 U.S.C. §112, second paragraph. The specification, at p. 1, paragraph 14, recites that “spacer arms are radicals or ordinary chemical groups bound to the molecules of coloring agents which modify some of their properties.” The specification further defines “spacer arms” as “either straight or branched C<sub>1</sub>-C<sub>10</sub> alkylene chains, which carry polar terminal groups, bound to the structure of the coloring agent.” (p. 1, paragraph 17). Thus, the phrase “spacer arm” is defined in the specification, making claim 1 and dependent claims 2-20 clear and unambiguous.

Claim 2 has been rejected as being indefinite. The Examiner contends that the term “R” is defined twice and that “R” can not be both an alkylene group and an integer. Without conceding the correctness of the Examiner’s rejection, Claim 2 has been amended. It is believed that the current amendment places Claim 2 in compliance with 35 U.S.C. §112, second paragraph.

Claim 3 has been rejected as being indefinite for reciting the phrase “ftalocianine, eventually metallized”. Without conceding the correctness of the Examiner’s rejection, Claim 3

has been amended, deleting “eventually metallized.” It is believed that the present amendment renders claim 3 definite and in compliance with 35 U.S.C. §112, second paragraph.

Claims 4 and 5 have been rejected as being indefinite. The Examiner contends that the term “sterified” should be “esterified”. Claims 4 and 5 have been amended to recite “esterified”. The current amendment is believed to place Claim 2 in compliance with 35 U.S.C. §112, second paragraph.

Claim 8, also stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Claim 8 has been amended to recite member W being selected from two distinct substituents. Claim 12 is now believed to comply with 35 U.S.C. §112, second paragraph.

*(ii) Rejections under 35 U.S.C. § 102*

Claims 1-4, 6, 12, and 16-17 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,725,285 to Yamanaka *et al.* (“Yamanaka”). The Examiner contends that Yamanaka discloses an anionic reactive azo dye, having the spacer arm  $\text{NH}(\text{CH}_2)_2\text{SO}_3\text{Na}$ , used to dye cotton.

Claims 1, 2, 9, 10, 12, 14, and 16 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,693,103 to Van Chambers *et al.* (“Van Chambers”). The Examiner contends that the references discloses a dye having a spacer arm of the formula  $\text{SO}_2(\text{CH}_2)\text{SO}_3$ , and that the dyes are used to dye polyester-cotton blend materials.

Claims 1-6, 9, 10, 16-17, and 20 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,597,485 to Mazza *et al.* and/or its continuation U.S. Patent No. 5,876,597 (collectively “Mazza”). The Examiner contends that Mazza teaches an anionic colorant having a spacer arm of the formula  $\text{NH}(\text{CH}_2)_6\text{NH}_2$ . The Examiner also contends that, although the anionic colorant with an attached spacer arm is represented as an

intermediate in a reaction scheme, the reference teaches the preparation and drying of the intermediate.

Claims 1-4, and 6 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,431,544 to Atkinson *et al.* (“Atkinson”). The Examiner contends that Atkinson teaches an anionic reactive dye forming an anionic colorant with a spacer arm of the formula  $\text{NH}(\text{CH}_2)_6\text{NH}_2$ .

Without conceding the correctness of the Examiner’s rejection, the applicant has amended Claim 1 to recite an anionic coloring agent comprising a spacer arm, which possess modified dying properties. This feature is supported in the specification at page 8, line 10. With respect to Claims 1-7, 9, 10, 12, 14, 16 and 17, the Examiner’s rejections under 35 U.S.C. §102(b) are respectfully traversed. The cited references do not teach each and every element of the present claims, and therefore the claims are not anticipated by the such references.

Yamanaka teaches the stabilization of aqueous solutions of coloring reactants by the addition of up to 5% polyacrilates. Yamanaka does not teach anionic coloring agents having spacer arms with modified dying properties as called for in the present claims. The colorant shown in Example 7, only discloses that a colorant may be stabilized by the addition of sodium polyacrilate. (Col. 6, l. 20). The example does not disclose how the colorant may be used, nor does it disclose the dyeing properties of the colorant. Example 7 fails to disclose an anionic dye having a spacer arm having modified dying properties as called for in claim 1. Therefore, Yamanaka, and specifically the colorant of Example 7, do not teach each and every element of Claim 1, and as such do not anticipate Claim 1.

Van Chambers teaches a process for exhaust dyeing of cotton and polyester fiber with an alkali-stable disperse dye at a pH between 8 and 11. (Col. 2, ll. 33-40). The coloring

agents taught by Van Chamber's are alkali-stable dyes, which are distinct from the anionic dyes of Claim 1. Moreover, the alkali-stable dyes taught by Van Chamber's do not contain spacer arms, as recited in claim, which modify dyeing properties. Van Chamber's does not disclose the use of anionic dyes and specifically anionic dyes having a spacer arm and modified dyeing properties. Therefore as set forth in Claim 1, Van Chambers does not anticipate Claim.

Mazza discloses a method of purifying proteins utilizing a polymer bound to an anionic dye. Mazza also discloses an anionic dye may linked to a polymer using a "spacer arm." (US Patent No. 5,876,597, Col. 11, ll. 27-35). While Mazza discloses the combination of a spacer arm and an anionic dye, neither US Patent No. 5,597,485 nor No. 5,876,597 disclose or suggest that the combination modifies the dyeing properties of an anionic dye. Thus Mazza does not disclose an anionic dye having a spacer arm and modified dyeing properties as called for in Claim 1.

Atkinson discloses a process for separating biological samples using high pressure affinity chromatography. Specifically, Atkinson teaches the use of a spacer arm to affix a ligand to a matrix. (Col. 3, ll. 43-46). While Atkinson, discloses anionic dyes with spacer arms for use in chromatography, the reference does not disclose the use of anionic coloring agents having spacer arms for dyeing fibers. Atkinson, does not disclose or suggest that a spacer arm may be attached to an anionic coloring agent in order to alter its dyeing properties as called for in Claim 1. Therefore, Atkinson does not anticipate Claim 1 under 35 U.S.C. § 102(b).

All of the references cited by the Examiner, fail to disclose each and every element of Claim 1, therefore it follows that the references also fail to disclose each and every element of Claims 2-4, 6, 12, and 16-17 which depend directly or indirectly from Claim 1. Furthermore, the references cited by the Examiner do not disclose the features of new Claims 21

and 22. For the reasons set forth above, withdrawal of the rejection under 35 U.S.C. §102(b) is respectfully requested.

(iii) Rejections under 35 U.S.C. § 103

Claims 12 through 20 have been rejected under 35 U.S.C. §103(a) as being obvious over Mazza or Atkinson in view of U.S. Patent No. 5,846,460 to Cockett *et al.* (“Cockett”) and U.S. Patent No. 5,463,032 to Akahori *et al.* (“Akahori”). The Examiner contends that it would have been obvious to combine the teachings of Akahori and Cockett, which teach the use of fiber reactive dyes, with the teachings of Mazza or Atkinson to arrive at the present invention.

With respect to Claims 12 through 20, applicants respectfully traverse the rejection and submit that, even if taken together, the cited references do not disclose or suggest the anionic coloring agent recited in the present claims and necessarily fail to provide a reasonable expectation of success in achieving the claimed invention.

Cockett teaches the use of hydrotalcite-like material together with an effective amount of magnesium salt to remove color from effluent. (Col. 2, ll. 27-32). Cockett does not teach the subject matter of the present claims, anionic coloring agents having modified dyeing properties. Rather, Cockett teaches the removal of color from effluent. One skilled in the art would not look to Cockett to solve the problem addressed by the present invention. Furthermore, the removal of color from effluent taught by Cockett, teaches away from the anionic coloring agent taught by the presently claimed invention. Because, Cockett is non-analogous to and teaches away from the presently claimed invention, one skilled in the art would not be motivated to combine Cockett with either Mazza or Atkinson to arrive at the presently claimed invention.

Furthermore, there is no suggestion in Cockett to combine the references to arrive at the present invention and therefore, the cited references in combination fail to render obvious the present invention.

Akahori teaches the addition of a vinylsulfonic reacting group to bisazo compounds to create an modified dyeing compound. The dyeing compounds taught by Akahori, contain a vinylsulfonic group, which reacts with hydroxyl or amide groups on the surface of target fibers. The, spacer arms taught by the presently claimed invention, are non-reactive and therefore, unlike the improved dyes taught by Akahori. There is no suggestion in Akahori, that a non-reactive spacer arm may be used to modify the dyeing properties of anionic coloring agents. Rather, Akahori teaches the opposite, a modified compound containing a vinylsulfonic group which is fiber reactive. Because Akahori fails to teach or suggest the use of a non-reactive spacer arm, one skilled in the art would not be motivated to combine Akahori with either Mazza or Atkinson to solve the problem contemplated by the present invention. Furthermore, the teachings of Akahori, which stress the use of a reactive group to improve dyeing properties leads one away from the presently claimed invention. Therefore, the invention defined in the subsisting claims is not obvious, as one skilled in the art would not have been motivated to combine Akahori with either Mazza or Atkinson to arrive at the presently claimed invention.

Both Akahori and Cockett, fail to teach or suggest the use of an anionic coloring agent with a spacer arm, having modified dyeing properties. Moreover, there is no suggestion in either Akahori or Cockett to combine their teachings with those of Mazza or Atkinson, to arrive at the claimed invention. Claims 12 through 20 of the present invention are not obvious in view

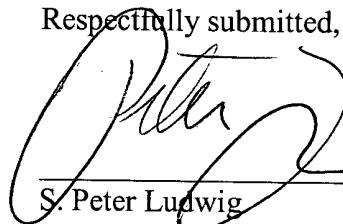
of either Akahori or Cockett and newly added Claims 21 and 22, are also not suggested by these references. Accordingly, withdrawal of the this ground for rejection is believed to be in order.

## CONCLUSION

In view of the preceding amendments and remarks this application is now believed to be in condition for allowance and such an action is earnestly solicited.

If there are any other issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



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